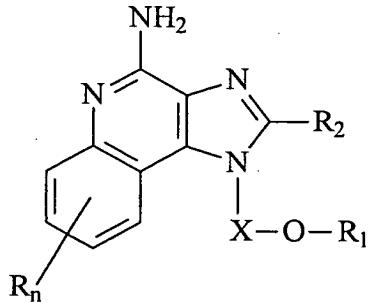


WHAT IS CLAIMED IS:

1. A compound of the formula (I):

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(I)

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wherein: X is -CHR<sub>5</sub>-, -CHR<sub>5</sub>-alkyl-, or -CHR<sub>5</sub>-alkenyl-;  
R<sub>1</sub> is selected from the group consisting of:

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- R<sub>4</sub>-NR<sub>3</sub>-SO<sub>2</sub>-R<sub>6</sub>-alkyl;
- R<sub>4</sub>-NR<sub>3</sub>-SO<sub>2</sub>-R<sub>6</sub>-alkenyl;
- R<sub>4</sub>-NR<sub>3</sub>-SO<sub>2</sub>-R<sub>6</sub>-aryl;
- R<sub>4</sub>-NR<sub>3</sub>-SO<sub>2</sub>-R<sub>6</sub>-heteroaryl;
- R<sub>4</sub>-NR<sub>3</sub>-SO<sub>2</sub>-R<sub>6</sub>-heterocyclyl;
- R<sub>4</sub>-NR<sub>3</sub>-SO<sub>2</sub>-R<sub>7</sub>;
- R<sub>4</sub>-NR<sub>3</sub>-SO<sub>2</sub>-NR<sub>5</sub>-R<sub>6</sub>-alkyl;
- R<sub>4</sub>-NR<sub>3</sub>-SO<sub>2</sub>-NR<sub>5</sub>-R<sub>6</sub>-alkenyl;

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- R<sub>4</sub>-NR<sub>3</sub>-SO<sub>2</sub>-NR<sub>5</sub>-R<sub>6</sub>-aryl;
- R<sub>4</sub>-NR<sub>3</sub>-SO<sub>2</sub>-NR<sub>5</sub>-R<sub>6</sub>-heteroaryl;
- R<sub>4</sub>-NR<sub>3</sub>-SO<sub>2</sub>-NR<sub>5</sub>-R<sub>6</sub>-heterocyclyl; and
- R<sub>4</sub>-NR<sub>3</sub>-SO<sub>2</sub>-NH<sub>2</sub>;

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R<sub>2</sub> is selected from the group consisting of:

- hydrogen;
- alkyl;
- alkenyl;

- aryl;
- heteroaryl;
- heterocyclyl;
- alkyl-Y-alkyl;
- alkyl-Y- alkenyl;
- alkyl-Y-aryl; and
- alkyl or alkenyl substituted by one or more substituents selected from the group consisting of:
  - OH;
  - halogen;
  - N(R<sub>5</sub>)<sub>2</sub>;
  - CO-N(R<sub>5</sub>)<sub>2</sub>;
  - CO-C<sub>1-10</sub> alkyl;
  - CO-O-C<sub>1-10</sub> alkyl;
  - N<sub>3</sub>;
  - aryl;
  - heteroaryl;
  - heterocyclyl;
  - CO-aryl; and
  - CO-heteroaryl;

Y is -O- or -S(O)<sub>0-2-</sub>;

R<sub>3</sub> is H, C<sub>1-10</sub> alkyl, or arylalkyl;

R<sub>4</sub> is alkyl or alkenyl, which may be interrupted by one or more -O- groups; or R<sub>3</sub> and R<sub>4</sub> can join together to form a ring;

each R<sub>5</sub> is independently H, C<sub>1-10</sub> alkyl, or C<sub>2-10</sub> alkenyl;

R<sub>6</sub> is a bond, alkyl, or alkenyl, which may be interrupted by one or more -O- groups;

R<sub>7</sub> is C<sub>1-10</sub> alkyl; or R<sub>3</sub> and R<sub>7</sub> can join together to form a ring;

n is 0 to 4; and

each R present is independently selected from the group consisting of C<sub>1-10</sub> alkyl, C<sub>1-10</sub> alkoxy, hydroxy, halogen and trifluoromethyl;

or a pharmaceutically acceptable salt thereof.

2. A compound or salt of claim 1 wherein X is  $-\text{CH}(\text{alkyl})\text{-alkyl}-$ , wherein the alkyl groups can be the same or different.

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3. A compound or salt of claim 1 wherein X is  $-\text{CH}_2\text{-CH}_2-$ .

4. A compound or salt of claim 1 wherein X is  $-\text{CH}(\text{C}_2\text{H}_5)\text{-CH}_2-$ .

10 5. A compound or salt of claim 1 wherein  $\text{R}_2$  is H.

6. A compound or salt of claim 1 wherein  $\text{R}_2$  is alkyl.

7. A compound or salt of claim 1 wherein  $\text{R}_2$  is  $-\text{alkyl-O-alkyl}$ .

15 8. A compound or salt of claim 1 wherein  $\text{R}_3$  and  $\text{R}_4$  join to form a heterocyclic ring.

9. A compound or salt of claim 1 wherein  $\text{R}_1$  is  $-\text{R}_4\text{-NR}_3\text{-SO}_2\text{-R}_6\text{-aryl}$ .

20 10. A compound or salt of claim 1 wherein n is 0.

11. A compound selected from the group consisting of:

$N$ -(2-{2-[4-amino-2-(2-methoxyethyl)-1*H*-imidazo[4,5-*c*]quinolin-1-yl]ethoxy} ethyl)methanesulfonamide;

25  $N$ -(2-{2-[4-amino-2-(2-methoxyethyl)-6,7,8,9-tetrahydro-1*H*-imidazo[4,5-*c*]quinolin-1-yl]ethoxy} ethyl)methanesulfonamide;

$N$ -(2-{2-[4-amino-2-(2-methoxyethyl)-1*H*-imidazo[4,5-*c*]quinolin-1-yl]ethoxy} ethyl)-*N*-methylmethanesulfonamide;

30  $N$ -(2-{2-[4-amino-2-(2-methoxyethyl)-6,7,8,9-tetrahydro-1*H*-imidazo[4,5-*c*]quinolin-1-yl]ethoxy} ethyl)-*N*-methylmethanesulfonamide;

2-butyl-1-{2-[2-(1,1-dioxidoisothiazolidin-2-yl)ethoxy]ethyl}-1*H*-imidazo[4,5-*c*]quinolin-4-amine; and

N-[10-(4-amino-2-methyl-1*H*-imidazo[4,5-*c*]quinolin-1-yl)-4,7-dioxadecyl]-5-dimethylaminonaphthalene-1-sulfonamide;  
or a pharmaceutically acceptable salt thereof.

5      12. A compound selected from the group consisting of:

N-(2-{2-[4-amino-2-(2-methoxyethyl)-1*H*-imidazo[4, 5-*c*]quinolin-1-yl]ethoxy}ethyl)-N-methylpropane-2-sulfonamide;

N-{2-[2-(4-amino-2-ethyl-1*H*-imidazo[4, 5-*c*]quinolin-1-yl)ethoxy]ethyl}methanesulfonamide;

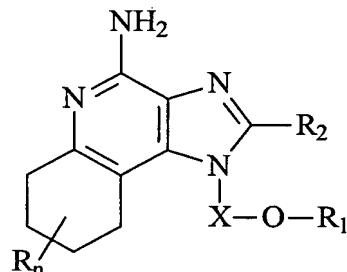
10     N-{2-[2-(4-amino-2-methyl-1*H*-imidazo[4, 5-*c*]quinolin-1-yl)ethoxy]ethyl}methanesulfonamide; and

N-{2-[2-(4-amino-2-methyl-1*H*-imidazo[4, 5-*c*]quinolin-1-yl)ethoxy]ethyl}propane-2-sulfonamide;

or a pharmaceutically acceptable salt thereof.

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13. A compound of the formula (II)



(II)

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wherein:      X is -CHR<sub>5</sub>-; -CHR<sub>5</sub>-alkyl-; or -CHR<sub>5</sub>-alkenyl-;

R<sub>1</sub> is selected from the group consisting of:

-R<sub>4</sub>-NR<sub>3</sub>-SO<sub>2</sub>-R<sub>6</sub>-alkyl;

-R<sub>4</sub>-NR<sub>3</sub>-SO<sub>2</sub>-R<sub>6</sub>-alkenyl;

-R<sub>4</sub>-NR<sub>3</sub>-SO<sub>2</sub>-R<sub>6</sub>-aryl;

-R<sub>4</sub>-NR<sub>3</sub>-SO<sub>2</sub>-R<sub>6</sub>-heteroaryl;

-R<sub>4</sub>-NR<sub>3</sub>-SO<sub>2</sub>-R<sub>6</sub>-heterocyclyl;

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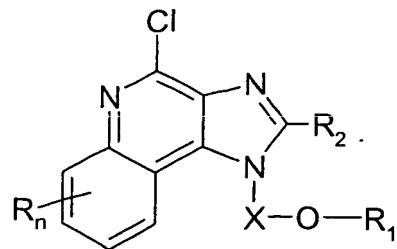
-R<sub>4</sub>-NR<sub>3</sub>-SO<sub>2</sub>-R<sub>7</sub>;  
-R<sub>4</sub>-NR<sub>3</sub>-SO<sub>2</sub>-NR<sub>5</sub>-R<sub>6</sub>-alkyl;  
-R<sub>4</sub>-NR<sub>3</sub>-SO<sub>2</sub>-NR<sub>5</sub>-R<sub>6</sub>-alkenyl;  
-R<sub>4</sub>-NR<sub>3</sub>-SO<sub>2</sub>-NR<sub>5</sub>-R<sub>6</sub>-aryl;  
5 -R<sub>4</sub>-NR<sub>3</sub>-SO<sub>2</sub>-NR<sub>5</sub>-R<sub>6</sub>-heteroaryl;  
-R<sub>4</sub>-NR<sub>3</sub>-SO<sub>2</sub>-NR<sub>5</sub>-R<sub>6</sub>-heterocyclyl; and  
-R<sub>4</sub>-NR<sub>3</sub>-SO<sub>2</sub>-NH<sub>2</sub>;

R<sub>2</sub> is selected from the group consisting of:

-hydrogen;  
10 -alkyl;  
-alkenyl;  
-aryl;  
-heteroaryl;  
-heterocyclyl;  
15 -alkyl-Y-alkyl;  
-alkyl-Y- alkenyl;  
-alkyl-Y-aryl; and  
- alkyl or alkenyl substituted by one or more substituents selected  
from the group consisting of:

20 -OH;  
-halogen;  
-N(R<sub>5</sub>)<sub>2</sub>;  
-CO-N(R<sub>5</sub>)<sub>2</sub>;  
-CO-C<sub>1-10</sub> alkyl;  
25 -CO-O-C<sub>1-10</sub> alkyl;  
-N<sub>3</sub>;  
-aryl;  
-heteroaryl;  
-heterocyclyl;  
30 -CO-aryl; and  
-CO-heteroaryl;

- Y is -O- or -S(O)<sub>0-2-</sub>;
- R<sub>3</sub> is H, C<sub>1-10</sub> alkyl, or arylalkyl;
- R<sub>4</sub> is alkyl or alkenyl, which may be interrupted by one or more -O- groups; or R<sub>3</sub> and R<sub>4</sub> can join together to form a ring;
- 5 each R<sub>5</sub> is independently H, C<sub>1-10</sub> alkyl, or C<sub>2-10</sub> alkenyl;
- R<sub>6</sub> is a bond, alkyl, or alkenyl, which may be interrupted by one or more -O- groups;
- R<sub>7</sub> is C<sub>1-10</sub> alkyl; or R<sub>3</sub> and R<sub>7</sub> can join together to form a ring;
- n is 0 to 4; and
- 10 each R present is independently selected from the group consisting of C<sub>1-10</sub> alkyl, C<sub>1-10</sub> alkoxy, hydroxy, halogen, and trifluoromethyl; or a pharmaceutically acceptable salt thereof.
14. A compound or salt of claim 13 wherein R<sub>2</sub> is H or alkyl.
15. A compound or salt of claim 13 wherein R<sub>2</sub> is -alkyl-O-alkyl.
16. A pharmaceutical composition comprising a therapeutically effective amount of a compound or salt of claim 1 and a pharmaceutically acceptable carrier.
- 20
17. A method of inducing cytokine biosynthesis in an animal comprising administering a therapeutically effective amount of a compound or salt of claim 1 to the animal.
18. The method of claim 17 wherein the cytokine is IFN- $\alpha$ .
- 25
19. A method of treating a viral disease in an animal comprising administering a therapeutically effective amount of a compound or salt of claim 1 to the animal.
20. A method of treating a neoplastic disease in an animal comprising administering a therapeutically effective amount of a compound or salt of claim 1 to the animal.
- 30
21. A compound of the formula (III):



(III)

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wherein **X** is -CHR<sub>5</sub>-, -CHR<sub>5</sub>-alkyl-, or -CHR<sub>5</sub>-alkenyl-;

**R**<sub>1</sub> is selected from the group consisting of:

- R<sub>4</sub>-NR<sub>3</sub>-SO<sub>2</sub>-R<sub>6</sub>-alkyl;
- R<sub>4</sub>-NR<sub>3</sub>-SO<sub>2</sub>-R<sub>6</sub>-alkenyl;
- R<sub>4</sub>-NR<sub>3</sub>-SO<sub>2</sub>-R<sub>6</sub>-aryl;
- R<sub>4</sub>-NR<sub>3</sub>-SO<sub>2</sub>-R<sub>6</sub>-heteroaryl;
- R<sub>4</sub>-NR<sub>3</sub>-SO<sub>2</sub>-R<sub>6</sub>-heterocyclyl;
- R<sub>4</sub>-NR<sub>3</sub>-SO<sub>2</sub>-R<sub>7</sub>;
- R<sub>4</sub>-NR<sub>3</sub>-SO<sub>2</sub>-NR<sub>5</sub>-R<sub>6</sub>-alkyl;
- R<sub>4</sub>-NR<sub>3</sub>-SO<sub>2</sub>-NR<sub>5</sub>-R<sub>6</sub>-alkenyl;
- R<sub>4</sub>-NR<sub>3</sub>-SO<sub>2</sub>-NR<sub>5</sub>-R<sub>6</sub>-aryl;
- R<sub>4</sub>-NR<sub>3</sub>-SO<sub>2</sub>-NR<sub>5</sub>-R<sub>6</sub>-heteroaryl;
- R<sub>4</sub>-NR<sub>3</sub>-SO<sub>2</sub>-NR<sub>5</sub>-R<sub>6</sub>-heterocyclyl; and
- R<sub>4</sub>-NR<sub>3</sub>-SO<sub>2</sub>-NH<sub>2</sub>;

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- R**<sub>2</sub> is selected from the group consisting of:
- hydrogen;
  - alkyl;
  - alkenyl;
  - aryl;
  - heteroaryl;
  - heterocyclyl;
  - alkyl-Y-alkyl;
  - alkyl-Y- alkenyl;

15

**R**<sub>2</sub> is selected from the group consisting of:

- hydrogen;
- alkyl;
- alkenyl;
- aryl;
- heteroaryl;
- heterocyclyl;
- alkyl-Y-alkyl;
- alkyl-Y- alkenyl;

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- alkyl-Y-aryl; and
- alkyl or alkenyl substituted by one or more substituents selected from the group consisting of:
- OH;
- 5 -halogen;
- N(R<sub>5</sub>)<sub>2</sub>;
- CO-N(R<sub>5</sub>)<sub>2</sub>;
- CO-C<sub>1-10</sub> alkyl;
- CO-O-C<sub>1-10</sub> alkyl;
- 10 -N<sub>3</sub>;
- aryl;
- heteroaryl;
- heterocyclyl;
- CO-aryl; and
- 15 -CO-heteroaryl;
- Y** is -O- or -S(O)<sub>0-2</sub>-;
- R**<sub>3</sub> is H, C<sub>1-10</sub> alkyl, or arylalkyl;
- R**<sub>4</sub> is alkyl or alkenyl, which may be interrupted by one or more -O- groups; or R<sub>4</sub> and R<sub>3</sub> can join to form a ring;
- 20 each R<sub>5</sub> is independently H, C<sub>1-10</sub> alkyl, or C<sub>2-10</sub> alkenyl;
- R**<sub>6</sub> is a bond, or is alkyl or alkenyl, which may be interrupted by one or more -O- groups;
- R**<sub>7</sub> is C<sub>1-10</sub> alkyl; or R<sub>3</sub> and R<sub>7</sub> can join together to form a ring;
- n** is 0 to 4; and
- 25 each **R** present is independently selected from the group consisting of C<sub>1-10</sub> alkyl, C<sub>1-10</sub> alkoxy, hydroxy, halogen and trifluoromethyl; or a pharmaceutically acceptable salt thereof.
22. A pharmaceutical composition comprising a therapeutically effective amount of a  
30 compound or salt of claim 13 and a pharmaceutically acceptable carrier.

23. A method of inducing cytokine biosynthesis in an animal comprising administering a therapeutically effective amount of a compound or salt of claim 13 to the animal.

24. The method of claim 23 wherein the cytokine is IFN- $\alpha$ .

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25. A method of treating a viral disease in an animal comprising administering a therapeutically effective amount of a compound or salt of claim 13 to the animal.

10 26. A method of treating a neoplastic disease in an animal comprising administering a therapeutically effective amount of a compound or salt of claim 13 to the animal.